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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,874	10/15/2003	Hiroji Aga	109725.01	4805
25944	7590	06/17/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			ESTRADA, MICHELLE	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/684,874	AGA ET AL.	
	Examiner	Art Unit	
	Michelle Estrada	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/29/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

In the IDS filed 9/24/05, the US patent documents were already cited in the PTO-892 mailed 6/29/04.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Yamamoto (JP-10275905), Murakami et al. (2004/0040491) and Wolf et al. (Vol. 1).

With respect to claim 1, Yamamoto discloses a method for producing an SOI wafer by the hydrogen ion delamination method comprising at least a step of bonding a base wafer (5) and a bond wafer (1) having a micro bubble layer formed by gas ion implantation (See fig. 1C) and a step of delaminating a wafer having an SOI layer at the micro bubble as a border (See fig. 1E).

Yamamoto does not disclose wherein a CZ wafer produced from a single crystal ingot of which COPs are reduced for the whole crystal is used as the bond wafer.

Wolf et al. (Vol. 1) discloses that the CZ wafer can be produced from a single crystal ingot (See pages 23-25).

It would have been within the scope of one of ordinary skill in the art to combine the teachings of Yamamoto and Wolf et al. to enable production of the CZ wafer to be performed in the process of Yamamoto because it has a relative high degree of crystal purity and it helps to simplify the process.

Murakami et al. discloses a silicon single crystal ingot of which COPs are reduced for the whole crystal (Page 2, Paragraph [0022] and Page 3, Paragraph [0052]).

It would have been within the scope of one of ordinary skill in the art to combine the teachings of Yamamoto, Murakami et al. and Wolf et al. to enable the crystal ingot formation step of Yamamoto and Wolf et al. to be performed according to the teachings of Murakami et al. because one of ordinary skill in the art would have been motivated to look to alternative suitable methods of performing the disclosed crystal ingot formation step of Yamamoto and Wolf et al. and art recognized suitability for an intended purpose has been recognized to be motivation to combine. See MPEP 2144.07. Further, it will enhance quality of the product.

With respect to claim 2, Yamamoto discloses wherein the wafer having an SOI layer is subjected to a heat treatment under an atmosphere containing hydrogen in a batch processing type furnace after the delamination step (See Abstract).

With respect to claim 3, it is inherent that the process of Yamamoto will result in an SOI wafer which has a RMS value of 0.5 nm or less concerning surface roughness for both 1 μm square and 10 μm square, because the same process is being performed in Yamamoto as that of the instant invention and it will yield the same result.

Response to Arguments

Applicant's arguments filed 9/29/04 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., when an ordinary CZ wafer is used as a bond wafer to form an SOI wafer, the buried oxide layer is etched through COPs in the SOI layer when the delaminated SOI wafer is subjected to heat treatment in the atmosphere containing hydrogen or argon) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that none of the references disclose that generation of pits can be prevented or reduced by using a CZ wafer produced from a single crystal ingot of which COPs are reduced for the whole crystal is used as the bond wafer to form an SOI wafer. However, it is not necessary for the reference to disclose that the process of the reference is performed to achieve the same goals as applicant or to obtain the same advantages recognized by applicant. It is sufficient that the process suggested by the reference alone or in combination with the remaining references is encompassed by the instant claims.

Applicant argues that none of the references teach the benefits that can be achieved by the method of claim 1. However, it is not necessary for the reference to disclose that the process of the reference is performed to achieve the same goals as

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applicant or to obtain the same advantages recognized by applicant. It is sufficient that the process suggested by the reference alone or in combination with the remaining references is encompassed by the instant claims.

The remaining arguments are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Estrada whose telephone number is 571-272-1858. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2800.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MEstrada
June 1, 2005



George Fourson
Primary Examiner
Art Unit 2823